HW4: Phonewords of a phone number

Total: 20pts.

Due: 3:29PM March 6th on turnin system

You can work on this assignment in a team of two members.

In the United States, a local phone number has seven digits, where each digit is the range of [0, 9]. Many telephone keypads have letters with the numbers, from which words, names, acronyms, abbreviations or alphanumeric combinations can be formed. These words are known as phonewords. Phonewords are easier to remember than a sequence of numbers.

In this assignment, you will design and implement an algorithm that prints all possible alphanumeric combinations that a given digit string could represent. The mapping of digit to letters is given above. The printed combination should only have two possible digits - 0 and 1, and all other digits from 2 to 9 should be printed out as English letters.

Details:

1. Name the class `Phonewords` and the program `Phonewords.java`.
2. Usage of Phonewords.java

```java
java Phonewords phoneNumber
```

#where phoneNumber is a digit string without the dash, for example 2887573.

3. The program prints on the console the number of possible combinations and the actual combinations. For example, for a given digit string 573, the output is as follows. The combinations don’t have to have orders.
4. Submit the source code `PhoneWords.java` to turn in before due time.

```
Number of combinations for 573: 36

jpd
jpe
jpf
jqd
jqe
jqf
jrd
jre
jrf
jsd
jse
jsf
kpd
kpe
kpf
kqd
kqe
kqf
krd
kre
krf
ksd
kse
ksf
lpd
lpe
lpf
lqd
lqe
lqf
lrd
lre
lrf
lsd
lse
lsf
```